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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,059	06/27/2003	Brian Taggart	884.887US1	7889

7590 12/20/2004

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EXAMINER

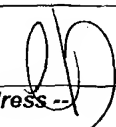
LAM, CATHY FONG FONG

ART UNIT PAPER NUMBER

1775

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/608,059	Applicant(s) TAGGERT ET AL.	
	Examiner Cathy Lam	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 28-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 28-43 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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In view of the amendment and remarks filed on September 24, 2004, the pending claims are continued to be unpatentable as following:

***Claim Rejections - 35 USC § 102***

1. Claims 1-3, 28-31 and 36-39 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Joy et al (US 6359233).

Joy discloses a printed wiring board comprised of a substrate (11), bus bar (19) and conductive pads.

The bus bar (19) containing circuit patterns are formed onto both surfaces of the substrate (11).

The circuit patterns comprised of conductive fingers (23) which is made from copper. Conductive pads are formed onto the end portion of the copper conductive fingers. Each conductive pad is comprised of two layers, the first one is a nickel layer (27) and the second one is a gold layer (29) (Fig. 4 & col 4 L 55-57).

The two layers of the conductive pad are analogous to the first and second plating layers of the metallic surface finish of the present invention.

***Claim Rejections - 35 USC § 103***

2. Claims 1-5 and 28-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joy et al (US 6359233) in view of Jackson (US 5097100).

Joy teaches the present invention but does not teach the conductive pad being two gold layers, nor does it teach the thickness of the conductive pad.

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Jackson teaches a terminal pad over a substrate. The terminal pad is a gold pad (18) which is formed onto a conductive layer (19). The conductive layer (19) can be a gold layer as well (col 4 L 22-25).

Both the terminal pad (18) and the conductive layer (19) can be the same noble metals such as gold, iridium and platinum, etc. (col 4 L 59-64 & col 5 L 1-3).

Jackson further teaches that the terminal pad (18) is a soft gold having a thickness of 2  $\mu\text{m}$  (col 7 L 47-49).

In view of the prior art teachings, one skill in the art would choose a metallic surface finish that comprises of two gold layers over the copper conductive fingers because the top gold layer is ductile which eases external bonding and the bottom gold layer provides good corrosion resistance (see Jackson, col 2 L 40-44).

***Allowable Subject Matter***

3. Claims 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if incorporate into the independent claims.

4. The following is a statement of reasons for the indication of allowable subject matter: there is no teaching in the prior art directed to having a first plating layer being a precious metal and a second plating layer is a layer having an equal or higher electrochemical potential than the first plating layer plated over the copper metallization layer. There is no teaching in the prior art directed to having two gold plating layers over the copper metallization layer.

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***Response to Arguments***

5. Applicant's arguments filed on September 24, 2004 have been fully considered but they are not persuasive. Applicant disagrees the art rejections and raises the following issues:

A. Joy does not teach a metallization on the surface of the substrate or web. Joy does not teach the bond fingers.

B. Jackson's invention contemplates a structure subject to corrosion in the environment ....for vehicle, vessel and aerospace inertial navigation devices...etc.

In respond to the above issues:

A. Joy clearly teaches a printed wiring board with copper metallization on both surfaces, and two metal layers are formed over the copper metallization. The examiner takes the position that the two metal layers resemble the 1<sup>st</sup> plating layer and the 2<sup>nd</sup> plating layer as claimed by the applicant.

B. Jackson's invention is directed to a wiring board that has two gold conductive layers. The wiring board can be used in vehicle, vessel and aerospace inertial navigation devices, etc. Jackson's invention is not limited to those devices.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
July 16, 2004